



# THE EFFECT OF M-LEARNING KNOWLEDGE MANAGEMENT, TEACHER EFFECTIVENESS AND THEIR INTERACTION ON PEDAGOGIC PERFORMANCE

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## ABSTRACT

This paper discusses implementation of mobile-learning knowledge management in teacher education for designing and delivering lessons during practice teaching for enhancing their pedagogical performance. Main objective of study was to study the effectiveness of Mobile-learning knowledge management on the pedagogic performance of teacher trainees. Sample chosen for the present study was 52 teacher trainees. For analysis of data ANOVA was applied and results were taken out subsequently. And findings suggest that knowledge management in M-learning enhance pedagogic performance of teacher trainees. Further findings reveals that teacher effectiveness also affects performance i.e. effective teachers performs better as compare to less effective teacher in terms of mobile-learning based pedagogic performance. Results taken out from that data collected from schools students regarding the performance of teacher trainee's reveals that there was significant effect of teacher effectiveness on the pedagogic performance of teacher trainees.

**KEYWORDS:** M-LKM (Mobile-Learning Knowledge Management), Pedagogic Performance, Teacher Effectiveness, Teacher Trainees.

## INTRODUCTION

Recent progression in the potentials of mobile technologies has led to leveraging ubiquitous learning environment that consequently increased the use of mobile devices for learning. Mobile devices provide access to learner at the moment of need driven by improved software's and applications. The continuous refinement of technologies within smartphones with advanced browsers had created inevitable opportunities for learners. In the present scenario mobile learning is not restricted to learners only but course content delivery through mobile device is also possible. It provides alternative methods through various mobile device platforms for content delivery. The educational approaches mainly saw in traditional classrooms are reliant only on teacher and learners elaborate participation in learning activities. Here M-learning seems to be extremely promising in the field of teaching and learning. For successful implementation M-learning into classrooms more effectively teacher should be prepared and trained for it. Mobile learning is a vast area to know about and one cannot diagnose it as a whole. For its easy and effective implementation one can adopt appropriate strategy of knowledge management into it. Knowledge management can be done in mobile device by creating, assimilating and disseminating knowledge. Features of knowledge management can support user during implementation of M-learning to improve their ease and performance. All the activities in the field of teaching and learning are ultimately done to enhance performance of teacher and learner. Performance here means the level of success and quality of task done by the teacher trainees. Performance is one of the most important aspects that can never be overlooked in the classroom while doing certain task to attain specific aim in contract to some known standards.

## Objective

- 1) To study the effect of M-learning knowledge management, teacher effectiveness and their interaction on pedagogic performance amongst teacher trainees. (Through self-assessment)
- 2) To study the effect of M-learning knowledge management, teacher effectiveness and their interaction on pedagogic performance amongst teacher trainees. (Through school students reaction)

## Hypothesis

- 1) There will be no significant difference between m-learning knowledge management, teacher effectiveness and their interaction on pedagogic performance amongst teacher trainees. (Through self-assessment.)
- 2) There will be no significant difference between m-learning knowledge management, teacher effectiveness and their interaction on pedagogic performance amongst teacher trainees. (Through school students)

## Methodology

In the present study, amongst various institutions running teacher training courses, one of the Institute was selected randomly. For further sample selection 52 teacher trainees through random sampling were chosen. The present study was experimental in nature following single group post-test design. For this study prior orientation about the M-learning knowledge management program was given to participants of the study. Followed by it participant carried out present experiment in real classroom for 36 days. And afterwards they filled appropriate required tools.

appropriate required tools.

## RESULTS AND ANALYSIS

- 1) The first objective was to study the effect of M-Learning Knowledge Management, teacher effectiveness and their interaction on pedagogic performance. Two levels of M-LKM were High and Low. And teacher effectiveness was High and Low as well. The pedagogic performance was studied on the basis of self-assessment and students feedback.

As mentioned earlier two levels of M-LKM and teacher's effectiveness were considered. The data obtained were analyzed with the help of 2 x 2 factorial design ANOVA. The results are given in table 1.

**Table 1. Summary of Factorial Design ANOVA for Pedagogic Performance**

(N=52)

Source of Variance	df	SS	MSS	F
M-Learning Knowledge Management	1	1173.675	1173.675	21.213**
Teacher Effectiveness	1	653.496	653.496	11.811**
A x B	1	146.722	146.722	2.652
Error	48	2655.730	55.328	
Total	52	592778.00		

\*\*Significant at 0.01 level

### 1.1 Effect of M-Learning knowledge Management on pedagogic performance

From the table no.1 it can be observed that the F-value for M-Learning Knowledge Management is 21.213 which is significant at 0.01 level with df=1/48. It reflects that mean score of pedagogic performance among teacher trainees in context to High and Low M-LKM differ significantly. Thus there was significant effect of M-LKM on pedagogic performance of teacher trainees. In this context, the null hypothesis that there is no significant effect of M-LKM on pedagogic performance of teacher trainee's, is rejected. It may, therefore be said that M-LKM was found to effect the pedagogic performance among teacher trainees.

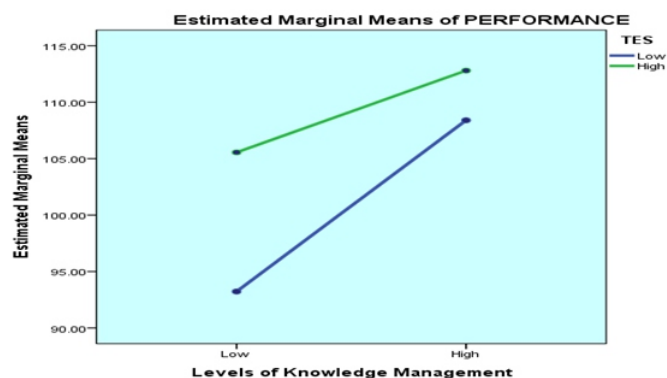
Further the mean of pedagogic performance of teacher trainees possessing High M-LKM was found to be 110.60 which is significantly higher than the mean of pedagogic performance of teacher trainees belonging to Low M-LKM that is 99.39. It may therefore, be concluded that pedagogic performance was found to be dependent of M-LKM.

### 1.2 Effect of Teacher Effectiveness on Pedagogic Performance

The F-value for teacher's effectiveness is 11.81 which is significant at 0.01 with df=1/48 (Vide Table No.1) It indicates that the mean score of pedagogic performance among teacher trainees with low teacher's effectiveness as well as high teacher's effectiveness differ significantly. So it indicates that teacher's effectiveness influence pedagogic performance significantly, among teacher trainees. In this light, the null hypothesis that there is no significant effect of teacher's effectiveness on pedagogic performance is rejected.

Further the mean of pedagogic performance of teacher trainees pertaining High Teacher Effectiveness was found to be 109.17 which is significantly higher than the mean of pedagogic performance of teacher trainees belonging to Low Teacher Effectiveness that is 100.81. It may therefore, be concluded that pedagogic performance was found to be dependent of Teacher Effectiveness. It may therefore, be concluded that pedagogic performance was found to be dependent of teacher effectiveness.

**Graph no. 1. Effect of M-Learning Knowledge Management, Teacher Effectiveness and their interaction on pedagogic performance.**



From graph no.1. It can be seen that teacher trainees possessing High M-Learning Knowledge Management performs better than those having Low M-Learning Knowledge Management. In other words M-Learning Knowledge Management improves pedagogic performance amongst teacher trainees. Further, teacher trainees with High Teacher Effectiveness possess better pedagogic performance than teacher trainees with Low Teacher effectiveness.

### 1.3 Effect of interaction between M-LKM and Teacher Effectiveness on Pedagogic Performance

The F-Value for interaction between M-LKM and Teacher's Effectiveness is 2.265 which is not significant at 0.01 level with  $df = 1/48$ . It indicates that there was no significant effect of the resultant of interaction between M-LKM and teacher effectiveness on pedagogic performance of teacher trainees. In light of this, the null hypothesis that there is not significant effect of interaction between M-LKM and Teacher Effectiveness on pedagogic performance is not rejected. It may therefore be said that interaction between teacher effectiveness and M-LKM was found to have no effect on pedagogic performance amongst teacher trainees.

- The second objective was to study the effect of M-Learning Knowledge Management, teacher effectiveness and their interaction on pedagogic performance of teacher trainees through student's feedback. Two levels of M-LKM were High and Low. And teacher effectiveness was also considered with two levels High and Low. The data analysis of M-LKM, teacher effectiveness and their interaction on pedagogic performance was done with the help of factorial design ANOVA and the results followed by their interpretations are given in the following captions.

As mentioned earlier two levels of M-KM and teacher's effectiveness were considered. The data obtained were analyzed with the help of  $2 \times 2$  factorial design ANOVA. The results are given in table no. 2.

**Table .2. Summary of Factorial Design ANOVA for Pedagogic Performance.**

(N=52)

Source of Variance	df	SS	MSS	F
M-Learning Knowledge Management	1	994.599	994.599	29.112**
Teacher Effectiveness	1	188.385	188.385	5.514**
A x B	1	103.269	103.269	3.023
Error	48	1639.894	34.164	
Total	52	609273.442		

\*\*Significant at 0.01 level

### 2.1 Effect of M-knowledge Management on pedagogic performance

From the table no.2. It can be observed that the F-value for M-Learning Knowledge Management is 29.112 which is significant at 0.01 level with  $df = 1/48$ . It reflects that mean score of pedagogic performance among teachers trainees with high M-LKM and Low M-LKM differ significantly. Thus there was significant effect of M-LKM on pedagogic performance of teacher trainees. In this context, the null hypothesis that there is no significant effect of M-LKM on pedagogic performance of teacher trainee's, is rejected.

Further the mean of pedagogic performance with high M-LKM was 112.36 which is significantly higher than the mean of pedagogic performance with low

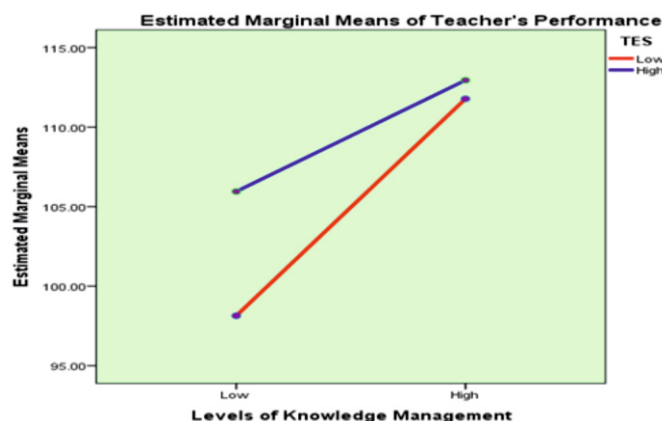
M-LKM that is 102.04. It may, therefore be said that M-LKM was found to effect the pedagogic performance among teacher trainees.

### 2.2 Effect of Teacher Effectiveness on Pedagogic Performance

The F-value for teacher effectiveness is 5.514 (Vide Table 4.5.1) which is significant at level 0.01 with  $df = 1/48$ . It indicates that the mean score of pedagogic performance with high teacher effectiveness and low teacher effectiveness differ significantly among teacher trainees. So it indicates that teacher effectiveness influence significantly, the pedagogic performance among teacher trainees. In this light, the null hypothesis that there is no significant effect of teacher effectiveness on pedagogic performance is rejected.

Further the mean of pedagogic performance of teacher trainees pertaining High Teacher Effectiveness was found to be 109.44 which is significantly higher than the mean of pedagogic performance of teacher trainees belonging to Low Teacher Effectiveness that is 104.96. It may therefore, be concluded that pedagogic performance was found to be dependent of Teacher Effectiveness.

**Graph no. 2. Effect of Teacher Effectiveness on pedagogic performance.**



From Graph .2. It can be seen that teacher trainees with high teacher effectiveness possesses better pedagogic performance than that of teacher trainees with low teacher effectiveness.

### 2.3 Effect of interaction between M-LKM and Teacher Effectiveness on Pedagogic Performance

The F-Value for interaction between M-LKM and Teacher Effectiveness is 3.023 which is not significant at 0.01 level with  $df = 1/48$ . It indicates that there was no significant effect of the resultant of interaction between M-LKM and teacher effectiveness on pedagogic performance of teacher trainees. In light of this, the null hypothesis that there is not significant effect of interaction between M-LKM and Teacher Effectiveness on the pedagogic performance is not rejected. It may therefore be said that interaction between teacher effectiveness and M-LKM was found to have no effect pedagogic performance of teacher trainees.

### Major findings

- Teacher trainees found M-Learning Knowledge Management to be important for better pedagogic performance. As teacher trainees possessing high M-LKM performed better during teaching than those pertaining low M-LKM.
- School students experienced enriched performance amongst teachers with high M-Learning Knowledge Management than those possessing low M-LKM.
- Teacher trainees found teacher effectiveness as crucial factor to pertain better pedagogic performance. As teacher trainees with high teacher effectiveness performed better than those with low teacher effectiveness during teaching through m-learning knowledge management.
- Feedback by school students also revealed teacher effectiveness is important factor for better pedagogic performance amongst teachers while teaching through m-learning knowledge management.

### Conclusion

This study was undertaken to find out effectiveness of M-learning knowledge management on the performance of teacher trainees. On the basis of the findings through self-assessment it was observed that M-learning knowledge management enhances performance of teacher trainees. Teacher effectiveness of teacher trainees does have effect on their performance. Teacher trainees with high effective teacher skills perform better than those pertaining low teacher effectiveness in reference to M-learning knowledge management. Other findings was drawn through student's perspective reveals that M-learning knowledge management do positively effect performance of teacher trainees. And on the other hand students also found that high effective teachers perform better than those with low teacher effectiveness.

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